

Application No. 10/537,685
Response dated 4/14/06
Reply to Office action dated 4/10/2006

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-12 (canceled).

Claim 13 (new). An implant for regenerating joint defects in a human or animal body, comprising:

a supporting body of a body-tolerable material having a porous or spongy structure;

said supporting body having infiltration channels formed therein beginning from a surface thereof and ending in said body, said infiltration channels receiving therein a tissue cell suspension for regeneration.

Claim 14 (new). The implant according to claim 13, wherein said supporting body comprises a spongy bone of human or animal origin.

Claim 15 (new). The implant according to claim 13, wherein said supporting body is impregnated with a cartilage tissue cell suspension.

Claim 16 (new). The implant according to claim 13, wherein said infiltration channels have a hollow cylindrical shape and a diameter in a range from 300 to 500 μm .

Claim 17 (new). The implant according to claims 16, wherein said infiltration channels have a depth substantially 3 to 10 times said diameter.

Claim 18 (new). The implant according to claim 17, wherein a value of said depth is approximately 5-fold to 10-fold a value of said diameter.

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Claim 19 (new). The implant according to claim 13, wherein said infiltration channels start from said surface of said supporting body and taper inwardly in a pointed cone shape or pointed frustum shape, and each of said infiltration channels have a midway diameter in a range from 200 to 500 μm .

Claim 20 (new). The implant according to claims 19, wherein said infiltration channels have a depth substantially 3 to 10 times said midway diameter.

Claim 21 (new). The implant according to claim 20, wherein a value of said depth is approximately 5-fold to 10-fold a value of said diameter.

Claim 22 (new). The implant according to claim 13, wherein said supporting body has a cylindrical shape with a base and a cover surface, and said infiltration channels start out from at least one of said base and said cover surface.

Claim 23 (new). The implant according to claim 22, wherein said at least one of said base and said cover surface at which said infiltration channels begin is vaulted in a convex shape.

Claim 24 (new). The implant according to claim 14, wherein the part of said supporting body impregnated with cartilage cell suspension is at least partially demineralized.

Claim 25 (new). A method of producing an implant or implant body for regenerating joint defects in a human or animal body, the method which comprises:

providing a supporting body and, starting from at least one partial area of a surface thereof, forming infiltration channels into the supporting body;

subsequently introducing or immersing at least the one partial area of the supporting body into a suspension containing cultured cells for regenerating cell tissue.

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Claim 26 (new). The method according to claim 25, which comprises impregnating the supporting body with cultured cartilage cells for regenerating cartilage tissue.

Claim 27 (new). The method according to claim 25, which further comprises, subsequently to introducing the supporting body into a cell suspension, subjecting the supporting body to a vacuum.

Claim 28 (new). The method according to claim 25, wherein the forming step comprises forming voids in the supporting body by one of mechanical boring, laser beam cutting, a water jet boring.

Claim 29 (new). The method according to claim 25, which further comprises, prior to impregnation with a cell or cartilage cell suspension, subjecting an area of the supporting body to be impregnated to a cleaning and/or demineralizing procedure.

Claim 30 (new). The method according to claim 29, which comprises introducing at least the area to be impregnated into an acidiferous demineralization medium, subjecting to a vacuum relative to ambient pressure, and subsequently rinsing the body for removing therefrom demineralization medium and salts, contained therein and being eliminated from the bone by the demineralization.

Claim 31 (new). The method according to claim 30, which comprises demineralizing with 0.5 N hydrochloric acid.

Claim 32 (new). The method according to claim 25, which comprises, prior to impregnating with the cell or cartilage cell suspension, soaking at least the area of the supporting body to be impregnated with a nutrient favoring a development of cells or cartilage cells.

Claim 33 (new). The method according to claim 32, which comprises soaking with hyaluronic acid or collagen.

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Claim 34 (new). The method according to claim 25, which comprises impregnating the supporting body with a mixture of a cell or cartilage cell suspension and a medium favoring a development of cells or cartilage cells.

Claim 35 (new). The method according to claim 25, which comprises impregnating the supporting body with a mixture of a cell or cartilage cell suspension and hyaluronic acid or collagen for favoring a development of cells or cartilage cells.

Claim 36 (new). A method of regenerating joint defects in a human or animal body, which comprises:

providing an implant according to claim 13 containing cultured cells for regenerating joint defects in a human or animal body;

forming at least one recess in a region of a bone forming the joint to be regenerated; and

inserting the implant into the recess in the bone for regenerating the joint defect.

Claim 37 (new). The method according to claim 36, which comprises providing an implant impregnated with cultured cartilage tissue cells.

Claim 38 (new). The method according to claim 36, wherein the forming step comprises forming a plurality of recesses, arranged in mosaic form, in the implant region of the bone, and inserting a respective said implant according to claim 13 into each of the recesses.